



# Local Partnership Team Environmental Workshop

Jennifer B. DeBruhl

Assistant Division Administrator - Local Assistance Division

(804)786-0334

- Created by the 2005 General Assembly
- Primary Responsibilities:
  - Technical assistance
  - Training opportunities
  - Focused on federally funded projects
- Focus on Policy Development and Communication

- A replacement for regular interaction with your:
  - District Staff
  - Residency Administrator/Urban Program Manager
  - Project Coordinator

- Increasing emphasis on local administration of federally funded projects
- FHWA holds VDOT accountable
- Local Success = VDOT Success

- Our first “topic workshop” – more in-depth discussion of the environmental process
- Identify and discuss key areas/issues
- Provide you with resources to help you be successful
- Parking Lot

# Environmental Overview

Jackie Cromwell  
VDOT Environmental Division  
804-371-6829

# Today's workshop

- State Environmental Review Process (SERP)
- “Kick Off Meetings
- National Environmental Policy Act (NEPA)
- Section 4(f) Evaluations
- Environmental considerations for Air Quality
- Environmental considerations for Noise Abatement



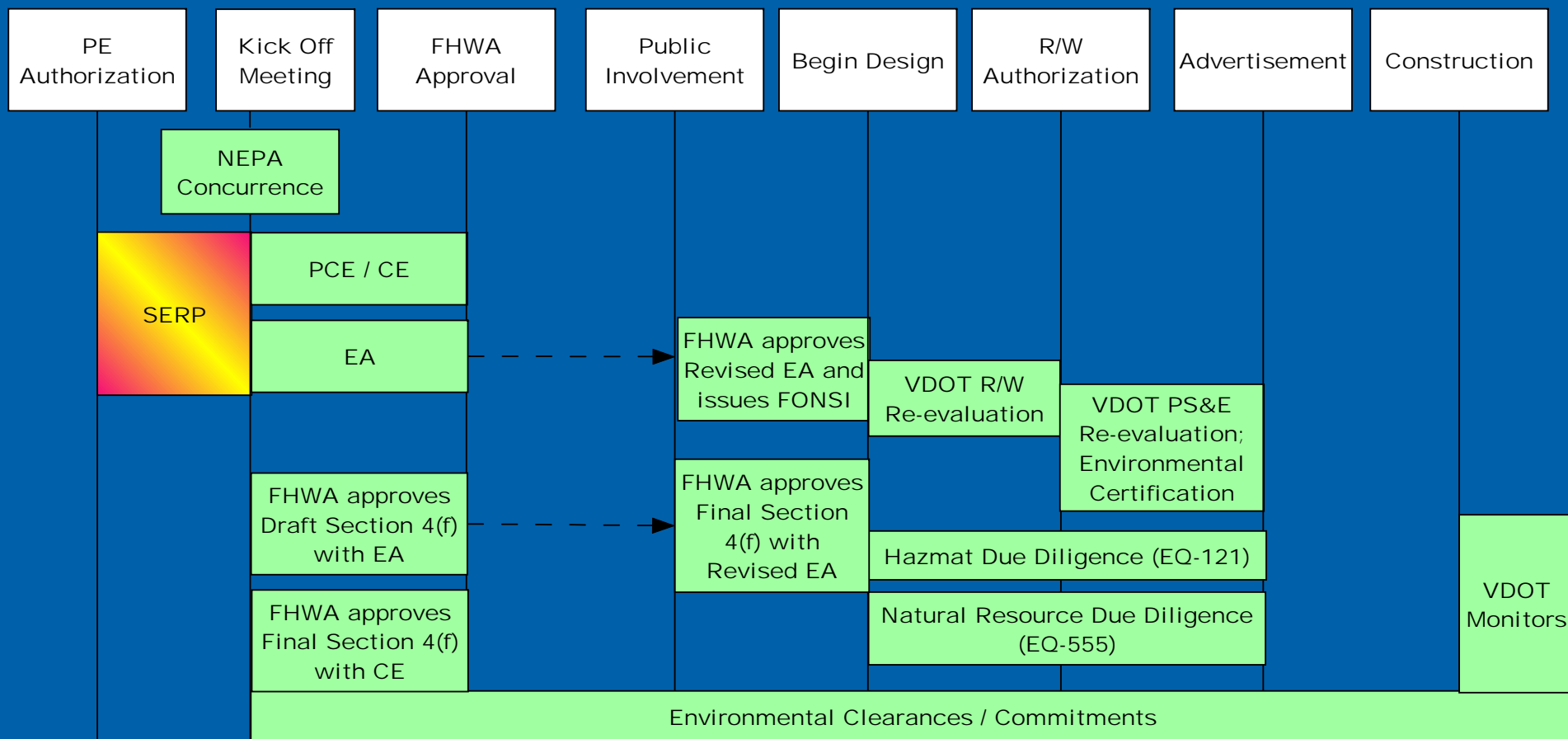
# Compliance with SERP / NEPA

Jim Cromwell  
VDOT Environmental Division  
804-225-3608

# State Environmental Review Process (SERP)



## SERP



- Established by the Code of Virginia §10.1-1188 in 1991
- Process identifies areas of environmental concern to be considered throughout design & construction

## State Natural Resource Agencies

- Department of Agriculture & Consumer Services
- Department of Conservation & Recreation
- Department of Environmental Quality
- Department of Forestry
- Department of Game & Inland Fisheries
- Department of Health
- Department of Historic Resources
- Department of Mines, Minerals, & Energy
- Virginia Marine Resources Commission
- Virginia Outdoors Foundation

## SERP Initiation

- Locality begins SERP with submittal of completed EQ-429
- SERP takes 60-90 days to complete
- Locality receives Preliminary Environmental Inventory (PEI)

# Preliminary Environmental Inventory

- PEI contains available information gathered in SERP process
- Agency comments included in individual resource section of PEI
- Locality should review comments to identify additional agency requirements or commitments

## SERP Closure

- At conclusion of SERP there may be additional agency coordination needed for:
  - Water quality permits
  - Hazardous materials
  - Cultural resources
  - Threatened & Endangered Species



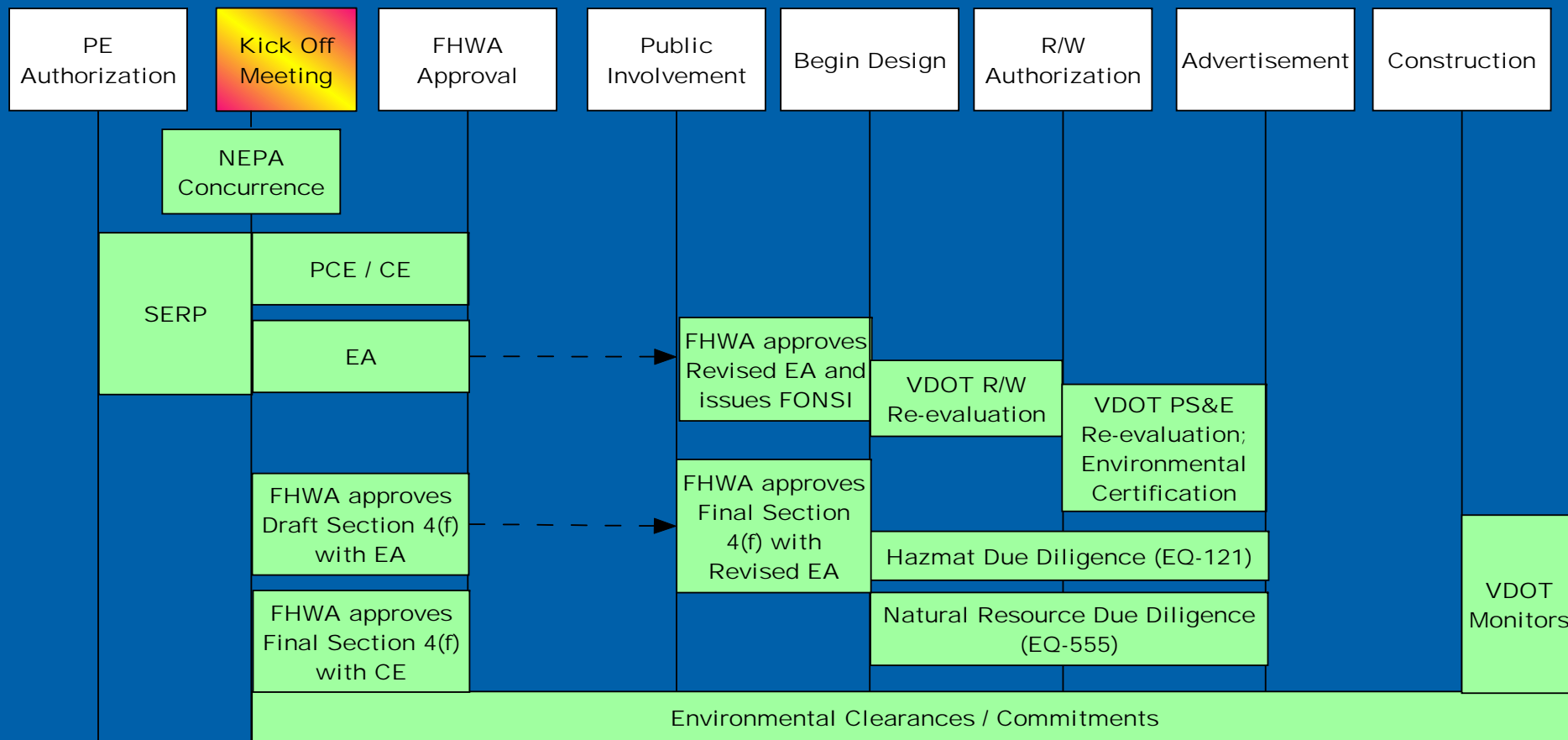
## After SERP

- No project changes without additional coordination
- Clearances & commitments must be addressed prior to or during construction

# **“Kick Off” Meeting**



## Kick Off Meeting



## Objectives

- Use SERP PEI & Environmental Scoping Requirements form as tools to identify environmental constraints
- Environmental constraints should be discussed at scoping or “kick off” meeting
- Identify cost & time associated with environmental activities
- Identify deliverables needed for consultant procurement

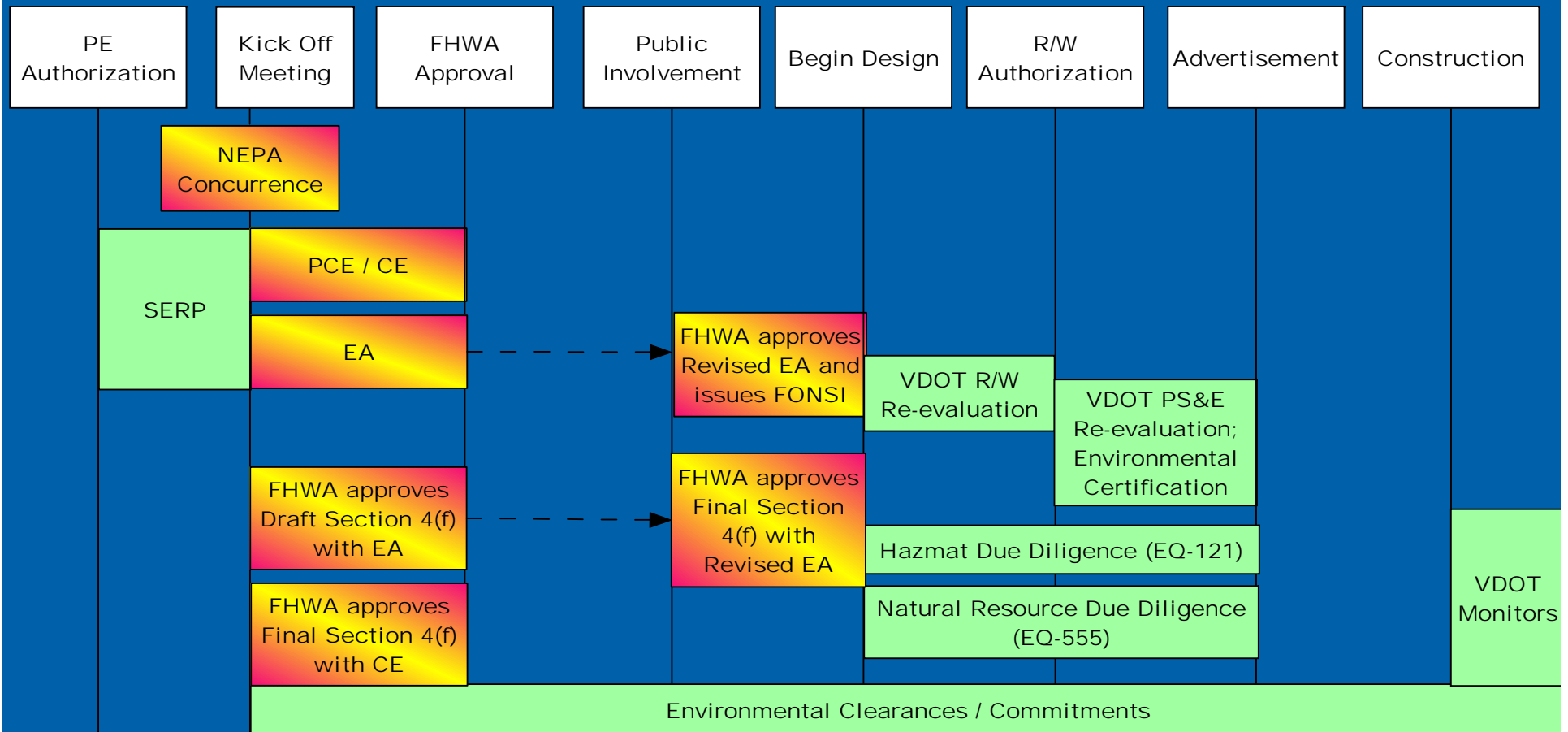
# Why consider Environmental Constraints?

- It's the law
- Environmental impacts relate to cost & time
- Environmental impacts introduce external influences on design & construction

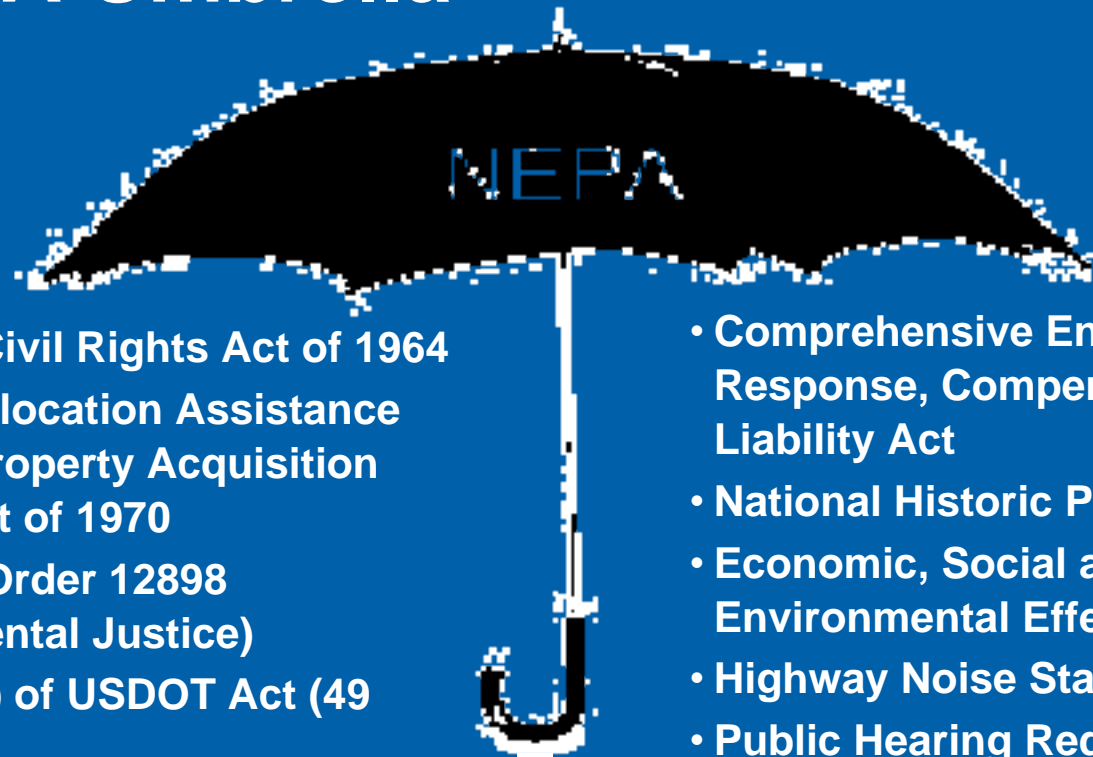
# **National Environmental Policy Act (NEPA)**



# NEPA



# NEPA Umbrella

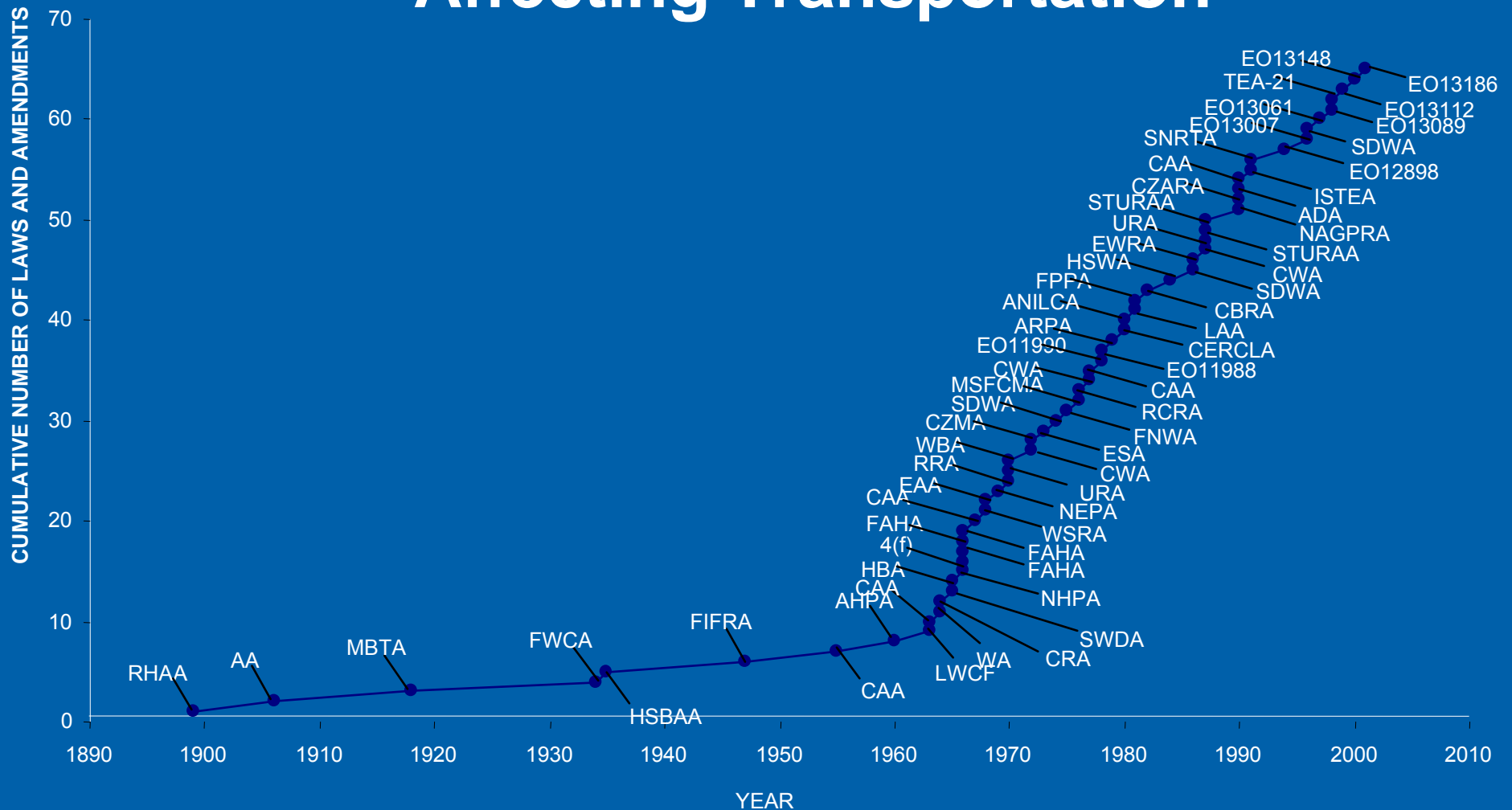


- Title VI of Civil Rights Act of 1964
- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
- Executive Order 12898 (Environmental Justice)
- Section 4(f) of USDOT Act (49 USC 303)
- Clean Air Act
- Safe Water Drinking Act
- Farmland Protection Policy Act
- Solid Waste Disposal Act

- Comprehensive Environmental Response, Compensation and Liability Act
- National Historic Preservation Act
- Economic, Social and Environmental Effects of Highways
- Highway Noise Standards
- Public Hearing Requirements
- Archaeological and Historic Preservation Act
- AND MORE...



# Federal Environmental Laws & EOS Affecting Transportation



## FHWA Implementation of NEPA

- “Umbrella” for all environmental law, regulation, executive orders, & FHWA policies
- Basis for approving federal funds
- Basis for Design approval
- Basis for adjudication of unpopular decisions
- Supports water quality permitting

# Essential Elements of NEPA

- Purpose & Need
- Alternatives
- Impacts
- Mitigation
- Public Involvement
- Interagency Coordination
- Documentation

# Environmental Factors in NEPA Scoping

- Influences project schedule & cost

Document Type	Duration
PCE	Hours
CE	Days
EA	Months
EIS	Years

# Level of NEPA Documentation

- Programmatic Categorical Exclusions (PCE)
- Categorical Exclusions (CE)
- Environmental Assessments (EA)
- Environmental Impact Statements (EIS)

## NEPA Concurrence

- NEPA Concurrence form
- Requests FHWA concurrence with level of NEPA document
- Locality completes & submits to VDOT
- VDOT coordinates with FHWA

TO: Mr. Roberto Fonseca-Martinez, FHWA  
 FROM: Doris Bush, VDOT District Environmental Manager  
 DATE: / /

### NEPA DOCUMENTATION CONCURRENCE FORM

Route:   
 Project Number:   
 From:   
 To:   
 Federal Project:   
 County/City:   
 PPMS ID #:

Description:

Attachments:  
 Map ☐  
 SERP PEI ☐  
 Other ☐

Suggested Level of NEPA Document:

CE Category 23 CFR 771.117: ☐ ☐ Description of Category: ☐  
 EA ☐  
 EIS ☐

Comments:

Cumulative Impacts  
 present or reasonably foreseeable  
 future projects in the area: ☐ Yes ☐ No

Comments:

We concur with the suggested level of NEPA document

FHWA Approval

Date

# Programmatic Categorical Exclusions (PCE)

- Types of actions defined by FHWA / VDOT agreement & regulation
- No significant impacts to environment
- Locality coordinates with regulatory agencies to determine if project meets PCE criteria
- FHWA / VDOT designed PCE format



## Programmatic Categorical Exclusion

# PCE Form

- Process steps & guidance available on VDOT website
- Locality completes & submits to VDOT
- VDOT copies FHWA

FROM: John Infuse  
DATE: / /

### PROGRAMMATIC CATEGORICAL EXCLUSION DOCUMENTATION

Route:  
Project Number:  
From:  
To:  
Federal Project:  
County/City:  
PPMSA/UPC ID:

The subject project meets the criteria for Programmatic Categorical Exclusion in accordance with:

- ☐ 23 CFR 771.117 (c)(1)  
☐ Agreement approved by the Federal Highway Administration on December 29, 2004 (d)(1) (see attached).

Description of CE Category:  
Project Description:

USGS Map ☐  
N/A ☐ (For Non-highway construction only)

#### IMPACTS:

	YES	NO
Significant Impacts to Planned Growth or Land Use	<input type="checkbox"/>	<input type="checkbox"/>
Relocations	<input type="checkbox"/>	<input type="checkbox"/>
Source: <input type="checkbox"/>		
Substantial Land Acquisition	<input type="checkbox"/>	<input type="checkbox"/>
USGS Construction Permit, USACE Individual Section 404 Permit	<input type="checkbox"/>	<input type="checkbox"/>
Source: <input type="checkbox"/>		
Adverse Effect on Historic Properties	<input type="checkbox"/>	<input type="checkbox"/>
Source: <input type="checkbox"/>		
Use of Land Protected by Section 4(f)	<input type="checkbox"/>	<input type="checkbox"/>
Significant Air, Noise or Water Quality Impacts	<input type="checkbox"/>	<input type="checkbox"/>
Source: <input type="checkbox"/>		
Significant Impacts on Travel Patterns	<input type="checkbox"/>	<input type="checkbox"/>
Changes in Interstate Access Control	<input type="checkbox"/>	<input type="checkbox"/>
Individual or Cumulative Significant Environmental Impacts	<input type="checkbox"/>	<input type="checkbox"/>

No further environmental document will be required.



## Categorical Exclusion (CE)

- By FHWA regulation
- No significant impacts to environment
- Locality coordinates with appropriate local / state / federal agencies
- FHWA / VDOT designed CE format



## CE Form

- Process steps & guidance available on VDOT website
- Locality completes & submits to VDOT
- VDOT coordinates with FHWA

TO: Mr. Roberto Fonseca-Martinez  
FROM: Doris Bush  
DATE: / /

### CATEGORICAL EXCLUSION DOCUMENTATION

Date CE level document approved by FHWA VA Division: / /

FHWA Contact: Ed Sundra

Route:

State Project Number:

From:

To:

Federal Project Number:

County/City:

UPC ID:

Project in STP: Yes ☐

Project Description:

CE Category 23 CFR 771.117:

Description of Category:

USGS Map ☐

Logical Termini and

Independent Utility: Yes ☐

N/A ☐ (For Non-highway construction only, explain in comments below)

Comments:

Typical Section:

Structures:

SOCIO-ECONOMIC	PRESENT		IMPACTS	
	YES	NO	YES	NO
Minority/Low Income Populations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disproportionate Impacts to Minority/Low Income Populations: Yes <input type="checkbox"/> No <input type="checkbox"/>				
Existing or Planned Public Recreational Facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Environmental Assessment (EA)

- Significance of impact uncertain
- Requires Purpose & Need statement
- May require Alternatives Analysis
- Goal of 15 pages maximum with supporting technical reports

## Purpose & Need Statement

- Transportation problem to be solved
- Does not focus on solutions or methods
- Contains facts (existing / future conditions)
- Reference technical studies
- Concise & easily understood
- Rely on tables / graphics and not text
- Locality must coordinate draft P&N chapter with VDOT / FHWA pre-draft EA or pre-draft Section 4(f)

## Purpose & Need Statement (cont.)

- Outcomes
  - Justifies improvement
  - Aids in selection of alternative
  - Supports FHWA financial participation

# Alternatives Analysis

- Address problem statement
- Focus on solutions
- Do not reiterate Purpose & Need
- Do not include detailed technical methods
- Contain facts demonstrating each alternatives ability to meet Purpose & Need
- Describe alternatives carried forward at comparable level of detail

## Alternatives Analysis (cont'd)

- Concise & easily understood
- Reference technical studies
- Rely on tables / graphics and not text
- Previously eliminated alternatives
- Locality must coordinate draft alternatives analysis chapter with VDOT / FHWA pre-draft EA or pre-draft Section 4(f)

## Range of Technical Studies

- Land Use
- Farmland
- Social
- Relocation
- Economic
- Air
- Noise
- Indirect Impacts
- Water Quality
- Wetlands
- Floodplains
- T&E Species
- Historic Properties
- Hazardous Materials
- Environmental Justice



# NEPA Clearances / Commitments

- PE, R/W, and construction
- Legally binding
- Documented in CE, FONSI, ROD, or Section 4(f) evaluation
- VDOT Environmental monitors

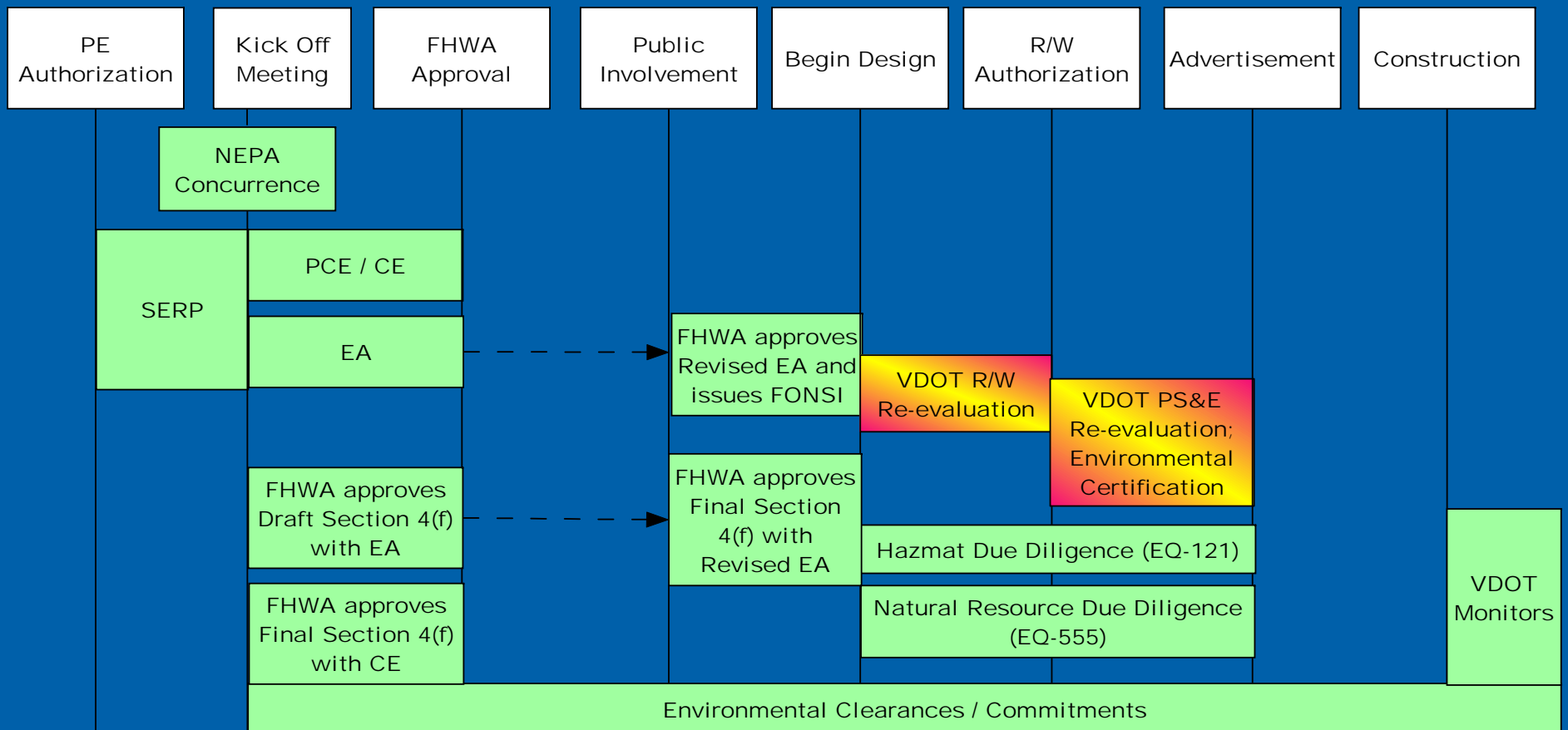
# Standards of Review

- NEPA is a procedural NOT a substantive law
- Court case judgments based on
  - ✓ “Hard Look”
  - ✓ Reasonableness
  - ✓ Not arbitrary & capricious
  - ✓ Full disclosure

# **NEPA Re-evaluations & Environmental Certification**



## NEPA Re-evaluations & Environmental Certification



## NEPA Re-evaluations

- Required by regulation at major approval points
- Right-of-Way (R/W) and Plans, Specifications, & Estimates (PS&E) approvals

## Initiation

- Locality requests at major approvals
- VDOT Environmental completes & submits to FHWA

## Why Re-evaluate?

To verify that:

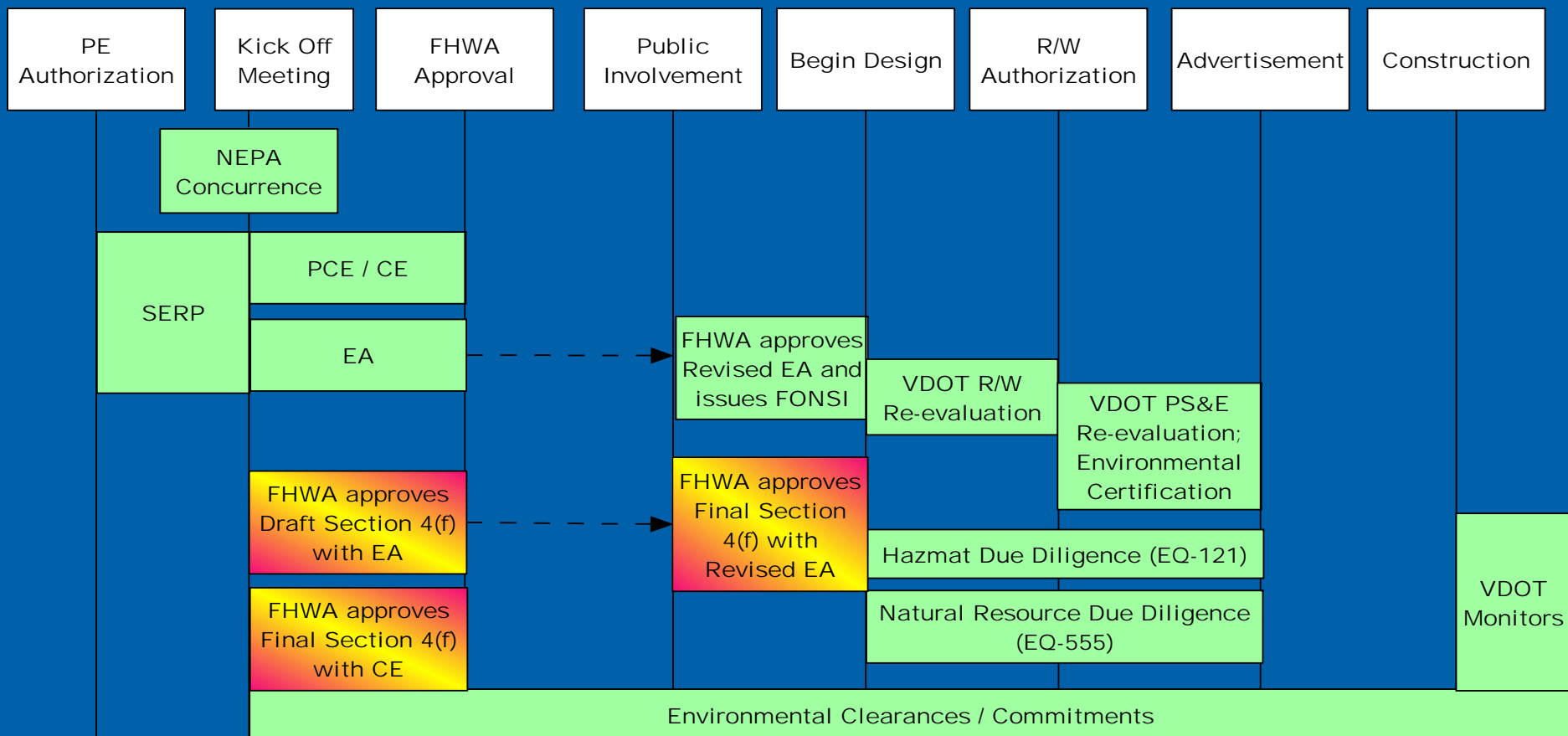
- No changes to scope / footprint
  - No changes to termini
  - No changes in impacts
  - No changes in regulations that alter NEPA conclusions
- 
- ✓ To obtain FHWA concurrence that NEPA conclusions remain valid

# Section 4(f) of 1966 USDOT Act





## Section 4(f)



## Authority & Responsibility

- Applies only to actions of agencies within USDOT
- FHWA responsible for applicability determinations, evaluations, findings & compliance
- Locality completes 4 (f) evaluation

## Applicability

- Any significant publicly-owned public park, recreation area, or wildlife & waterfowl refuge & any land from a historic property

## Criteria for Public Ownership & Access

- Significant publicly-owned public parks & recreational areas that are accessible to the public
- Significant publicly-owned wildlife & waterfowl refuges, irrespective of whether these areas are accessible to the public
- Historic properties, irrespective of ownership or access

## Significance Criteria

- Must be “significant” resource to apply
- Presumed significant unless official with jurisdiction concludes entire site not significant
- FHWA makes final decision on significance

## Feasible & Prudent Criteria

- Numerous legal decisions
- Must be well documented & supported
- Feasible alternative can be engineered, designed & built
- Prudent alternative cannot have unique problems, unusual factors, or impacts of extraordinary magnitude

# Purpose of Written 4(f) Evaluation

- Ensure adherence to regulatory & statutory requirements
- Establish Administrative Record
  - Courts review administrative records which must contain the following essential information:
    - Applicability or non-applicability of Section 4(f)
    - Coordination efforts involving officials with jurisdiction
    - Location & design alternatives that avoid use entirely or minimize use & harm
    - Analysis of impacts of avoidance & use alternatives; and
    - All measures to minimize harm, such as design variations, landscaping & other mitigation

## Other Laws & Requirements

- Often concurrent requirements of other federal agencies
- 4(f) requirements are independent of obligations found in other authorities
- Compliance with requirements of one law do not mean 4(f) requirements are satisfied



## Essential Elements of Section 4(f) Evaluation

- Purpose & Need
- Avoidance Alternative
- Feasible & prudent test for alternatives
- Feasible & prudent test for alternatives with least overall harm to resource

## Essential Elements of Section 4(f) Evaluation (cont.)

- Consideration of “all possible planning to minimize harm”
- Interagency Coordination—officials with jurisdiction & Department of Interior
- Documentation on 4(f) form

## Use of Resources

- Permanently incorporated into a transportation facility
- Temporary occupancy that is adverse
- Constructive use of land

# Alternatives

- More room to reject alternatives as unusual under NEPA than there is to find those same alternatives imprudent under Section 4(f)
- Must address location alternatives & design shifts that totally avoid the resource
  - No-build is not an avoidance alternative
  - Early engineering support is critical
  - Might have to build it—FHWA has final call
  - Must address minimization of impacts

## Rejection of Alternatives

1. Doesn't meet project purpose & need
2. Extraordinary operational or safety problems
3. Unique or truly unusual factors
4. Unacceptable & severe adverse social, economic or other environmental impacts
5. Extraordinary community disruption
6. Additional construction costs of extraordinary magnitude
7. Accumulation of factors, that collectively, rather than individually, have adverse impacts that present unique problems or reach extraordinary magnitudes.

## Measures to Minimize Harm

- Design modifications that lessen the impacts
- Mitigation measures that compensate for impacts
- Must be determined in consultation with jurisdictional official
- Must be applied equally to all properties / alternatives
- Must select alternative with least impact after mitigation

## Commitments

- Legal requirement
- Examples: landscaping, brick retaining walls, lighting, maintain access during construction, wildlife crossings, etc.

**QUESTIONS?**



# Environmental Considerations for Air Quality

Amy Costello  
VDOT Environmental Division  
804-371-6773

# Overview

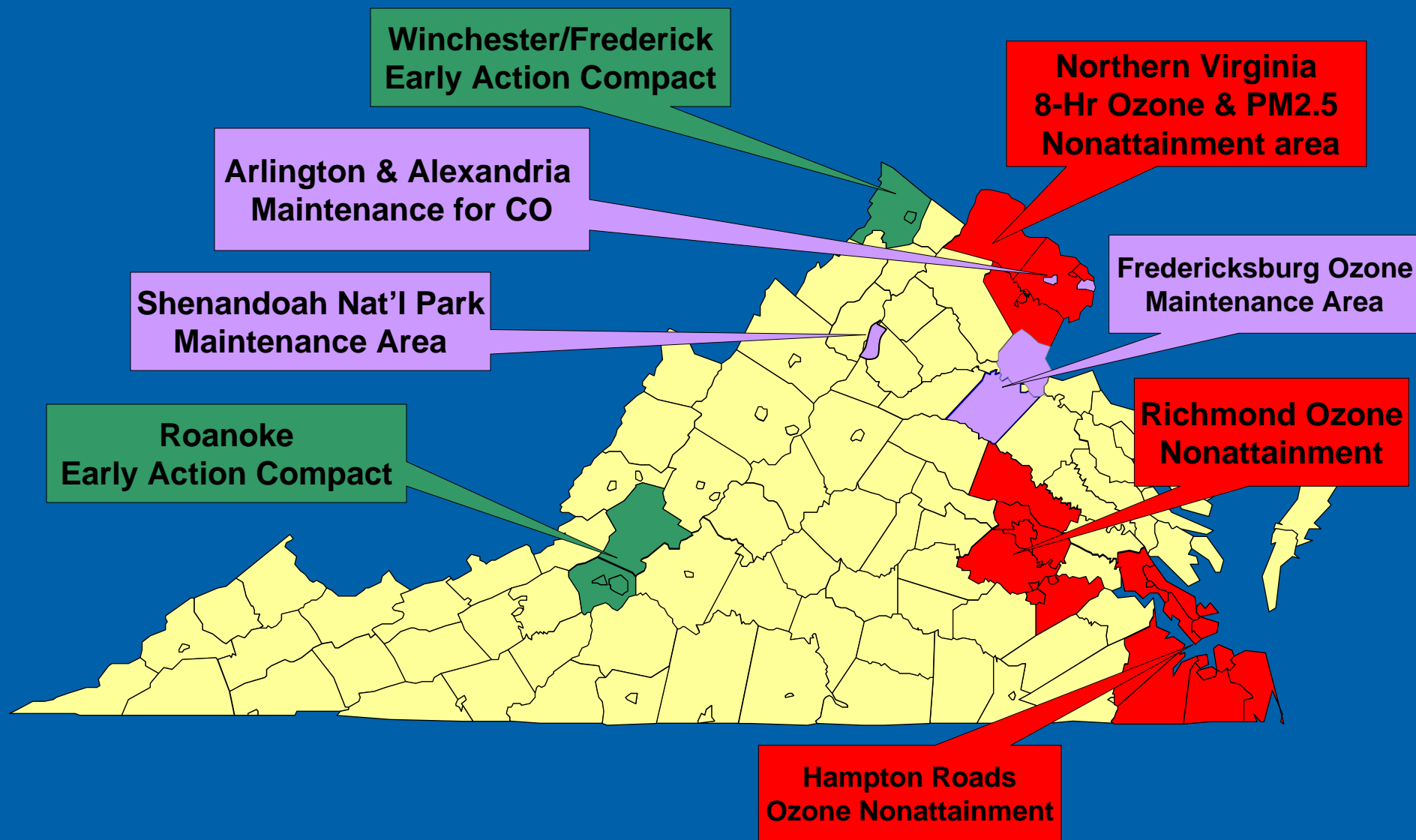
- Air Quality Basics
- Federal and State Requirements
  - Ozone
  - Particulate matter 2.5
  - Carbon Monoxide
  - Mobile Source Air Toxics
- Air Quality Challenges

- National Ambient Air Quality Standards (NAAQS)
- EPA standard based on health effects
- Six “Criteria Pollutants”
  - Ozone
  - Carbon monoxide (CO)
  - Particulate matter (PM)
  - Sulfur dioxide SO<sub>2</sub>
  - Nitrogen dioxide NO<sub>2</sub>
  - Lead (Pb)



Transportation  
Related

- Attainment– Meets NAAQS
- Nonattainment – Exceeds NAAQS
- Maintenance - Meets NAAQS, but previously exceeded the NAAQS
- Early Action Compact Area – Nonattainment status deferred



**Ask VDOT if an Air Quality Study is required**

## **Federal Conformity Requirements<sup>1</sup>:**

1. Regional Conformity
2. Project Level Conformity

1. 40 CFR 93 (Conformity Regulations)

## Regional Conformity Requirements:

- Regional air quality analysis
- Required for regionally significant projects in
  - Ozone Nonattainment or Maintenance Areas
  - Particulate Matter Nonattainment or Maintenance Areas
- Regionally significant projects must be properly programmed in the CLRP and TIP
  - Scope, project length, number of lanes, access, ad date
- Not required in Early Action Compact Areas
- VDOT or MWCOCG completes analysis

## Project Level Conformity Requirements:

- Requires studies to analyze vehicle emissions from project
- Hot spot analysis or microscale analysis
- Required for
  - Carbon Monoxide
  - Particulate Matter 2.5
    - NOVA
    - New standard broader application
    - Public Notice

See VDOT's Air Quality Consultant Guide:

[www.vdot.virginia.gov/business/bu-envFirstCities.asp](http://www.vdot.virginia.gov/business/bu-envFirstCities.asp)



# Mobile Source Air Toxics<sup>1</sup>

- Affects all federal projects
- Must use FHWA prototype language
- Three (3) Tiers
  - Exempt
  - Low Potential
  - High Potential

1. Interim Guidance on Air Toxic Analysis in NEPA Documents, FHWA, February 3, 2006

### **Tier 1 - Exempt Projects**

- Qualify for PCE under 23 CFR 771.117(c);
- Exempt under the Clean Air Act conformity rule (40 CFR 93.126); or
- No meaningful impacts on traffic volumes or vehicle mix

### **Tier 2 - Low potential for MSAT Effects - Qualitative Assessment**

- All projects that don't fall into Tier 1 or Tier 3.

### **Tier 3 - High potential for MSAT Effects - Quantitative Assessment**

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location; or
- Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000, or greater, by the design year.

- Conformity Cycles - 6-18 months to add or modified project in a conforming LRP or TIP
- Redesignations - Richmond & Hampton Roads expected to become maintenance areas – may be harder to demonstrate conformity
- New Regulations
  - Clean Air Act requires 5 year NAAQS review
  - Lawsuits
  - December 2006 new VDEQ regulations to expanded VOC control areas (cutback asphalt - May – Sept.)

**QUESTIONS?**

# Environmental Considerations for Noise Abatement

# Overview

- Federal and State Noise Requirements
- Noise Abatement Process
- Noise Abatement Challenges

## Federal Noise Regulation<sup>1</sup> & Policy<sup>2</sup>

- Provides criteria for highway noise studies & abatement designs
- Provides guidance for acoustical, structural, & material life-cycle
- Must incorporate reasonable & feasible noise abatement measures
- Requires DOT's to have a noise policy

1. 23 CFR 772 (Noise Regulations)

2. FHWA, Highway Traffic Noise Analysis and Abatement, Policy and Guidance. June 1995

## State Noise Abatement Policy

- Approved by FHWA & CTB in 1989; Revised in 1996
- Applies to Federal “Type I” projects only
  - New location or lanes/alignment changes
- Allows third party participation
- Sets reasonableness criteria at \$30k per impacted property
  - VDOT allows \$1.5 ft<sup>2</sup> up to \$30k for aesthetic treatment.
  - Locality can fund additional aesthetic treatment



### Ask VDOT to determine if a Noise Study is required

#### Keep in Mind

- 1) A noise study is required if:
  - A federally funded FHWA “Type 1” project
- 2) Mitigation may be required if:
  - Impacts ( $\geq 66\text{dBA}$ ) to noise sensitive properties
    - Residential property
    - School, Church, Park
  - Feasible – must be able to build/implement
  - Must provide impacts property with 5 dBA reduction
- 3) Refer to VDOT Noise Study & Abatement Process Checklist:

[www.virginiadot.org/business/environmental\\_requirements\\_federal.asp](http://www.virginiadot.org/business/environmental_requirements_federal.asp)

### Abatement Measures Applied in Virginia:

- Traffic Management
  - Restrict trucks
  - Speed calming
  - Dedicated lanes
- Alter horizontal/vertical alignments
- Acquire property as noise buffer
- Construct sound barriers / berms

### Vegetative Buffers

- Require ~200 feet of dense vegetation to reduce noise levels by 10 decibels
- Primarily provides a psychological relief if less than 100 feet dense vegetation

# Noise Wall / Berm Comparison

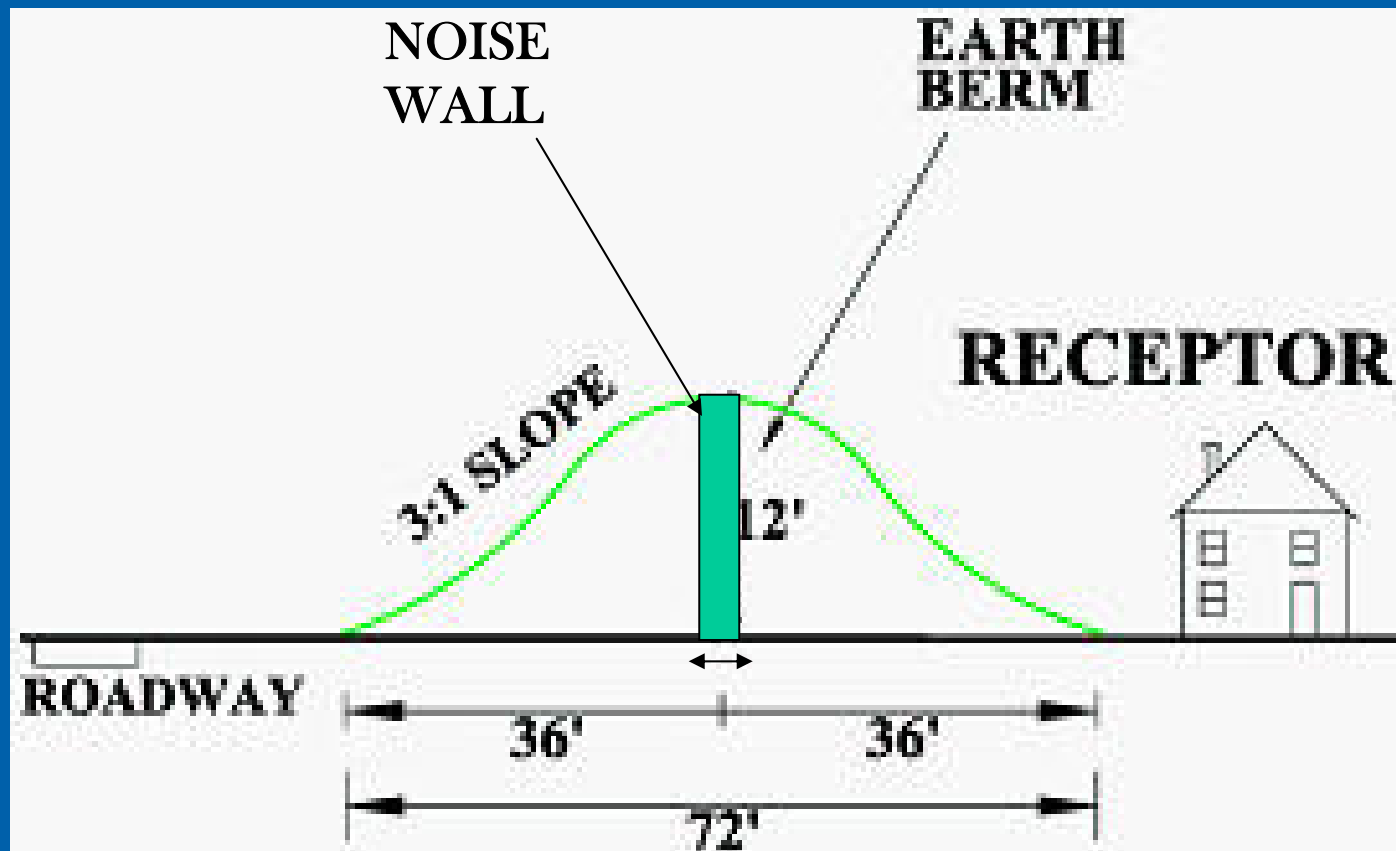
## Noise Walls

- Very effective
- Requires little space
- Applicable on most projects
- Low maintenance
- Higher cost

## Berms

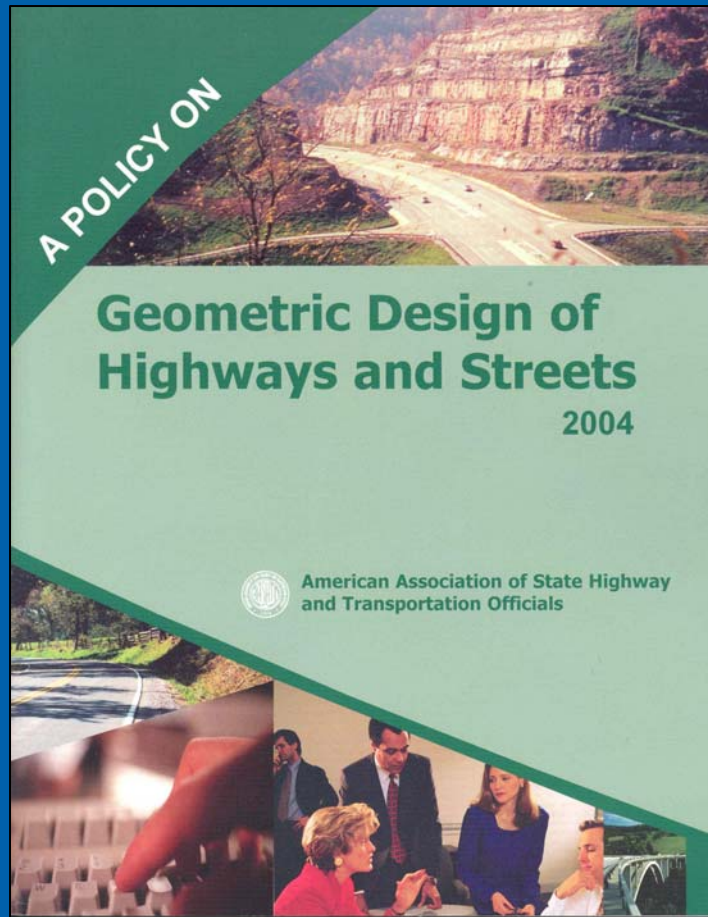
- Very effective
- Requires more space
- Limited project applicability
- Landscaping required
- Increased maintenance
- Lower cost

## Noise Wall / Berm Comparison



### Submit your Noise Study to VDOT for review

- Noise Report, TNM data & Traffic data
  - Study site location graphics
  - Discuss feasibility & reasonableness
  - Identify 66 dBA contour
  - Discuss construction noise mitigation
- Noise study must be updated, if design year or traffic change



## Design Year Requirements

- VDOT uses functional classes
- AASHTO based (23 USC 109 (b))
- FHWA approved VDOT method

## 22 years beyond advertisement:

- Interstates/NHS
- Freeways
- All arterials
- Rural Major & Minor Collectors
- Urban Collectors – new construction or major improvement

## 11 years beyond advertisement:

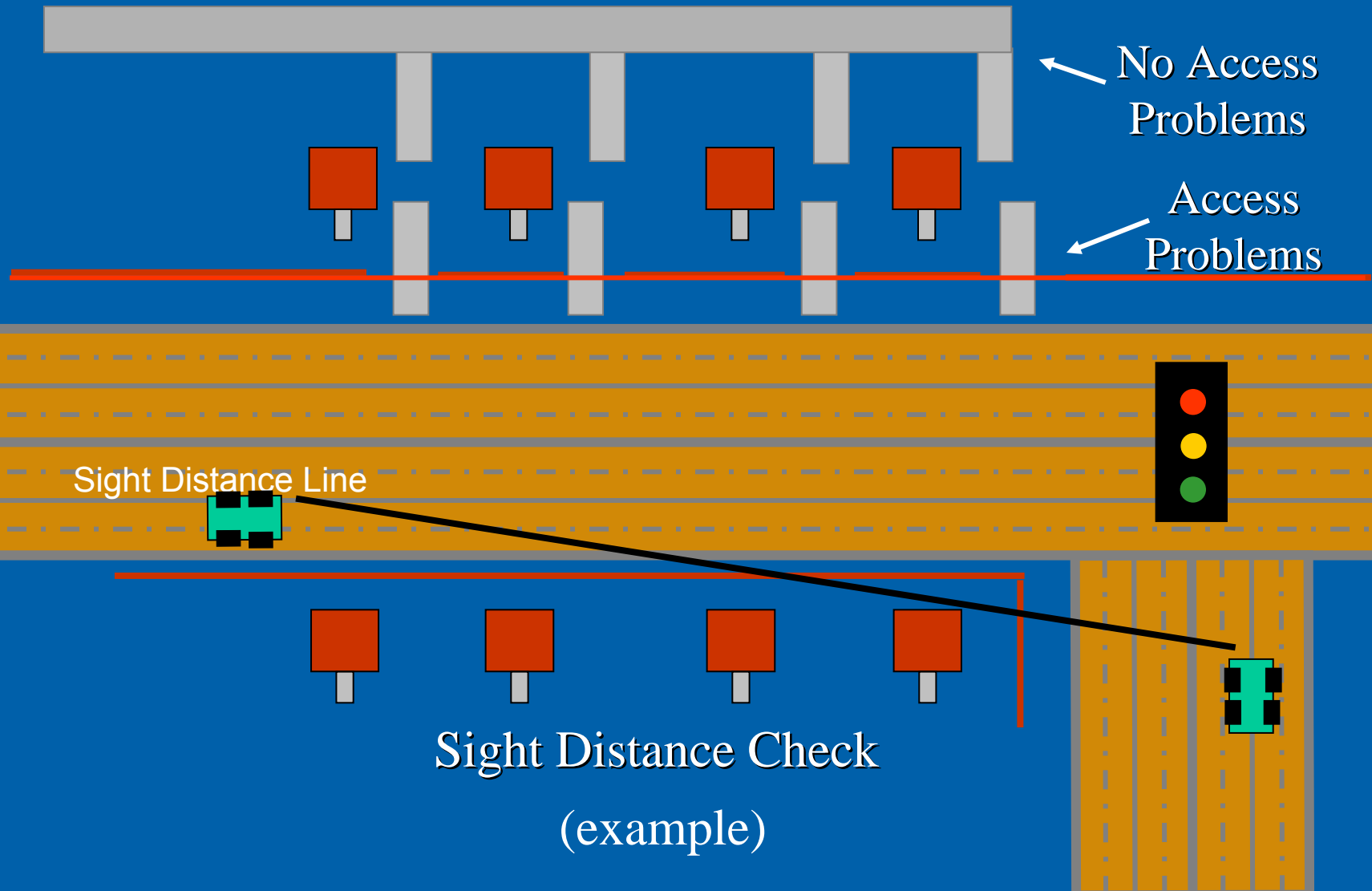
- Rural Minor collectors
- Urban Collectors – in kind or minor
- Local roads

### Schedule a Noise Abatement Committee Meeting w/ VDOT

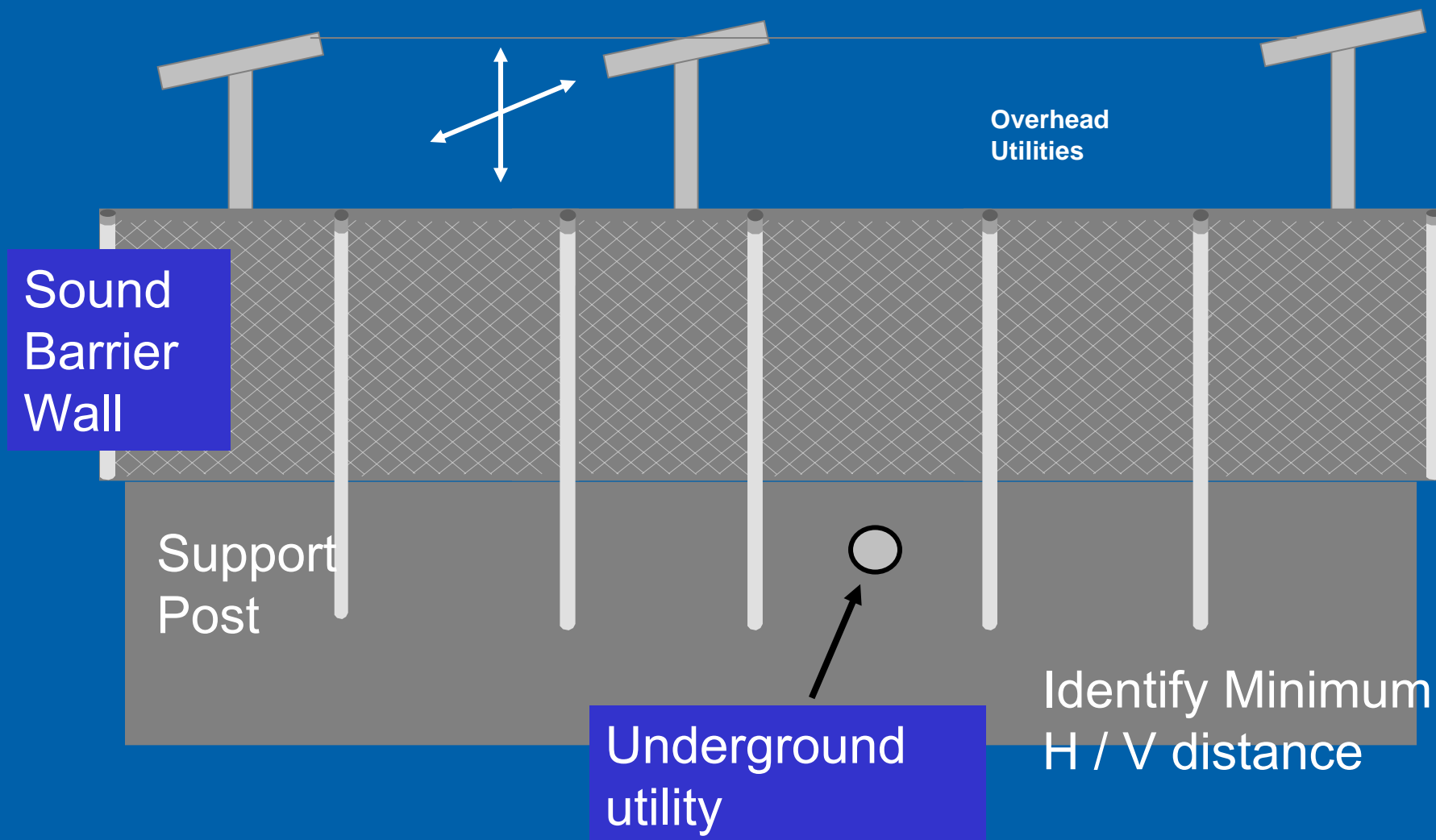
- If noise barriers are under consideration
  - Must show on plans at public hearing
- Purpose of NAC meeting:
  - Obtain FHWA concurrence w/ final barrier design
  - Identify issues such as site distance, conflicts with utilities, right of way, landscape & other design features



## Example: Access Constraint & Sight Distance



## Example: Utility Conflict

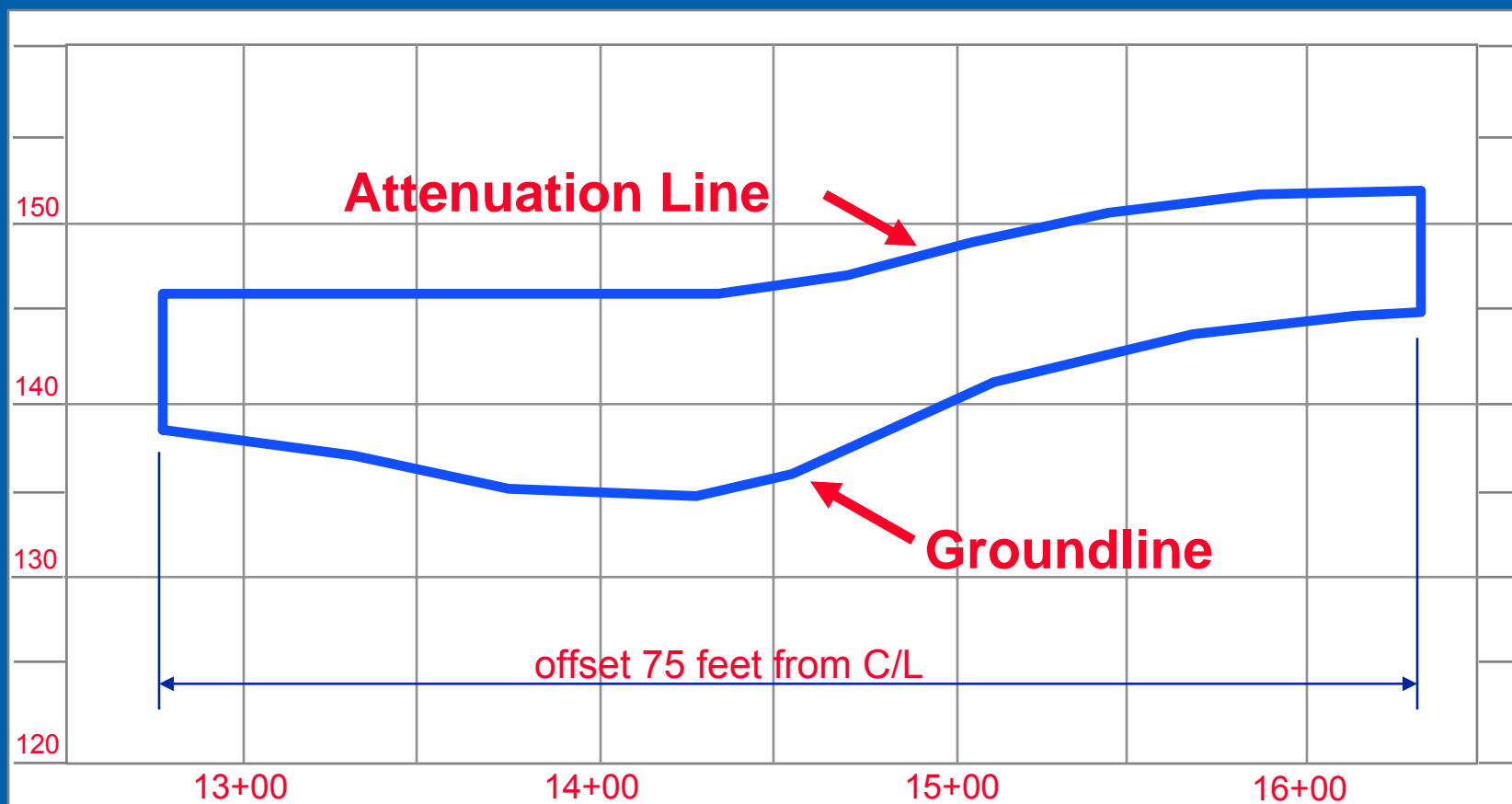


### Next Steps:

- VDOT will
  - Obtain Chief Engineer Approval Letter
  - Obtain FHWA written concurrence
- Locality will
  - Survey citizens
  - Incorporate sound barrier (s) into road design plans
  - Develop noise barrier special provisions

**Ask VDOT to review Noise Special Provision**

## Example: Barrier Plan



- Project design year - traffic projections
- Design plan changes can affect noise studies or abatement designs
- Obtaining survey for eligible properties beyond project construction limits
- Revised property acquisitions
- Early need for cross-section plans
- Establishing ROW / Maintenance easements

## Unresolved challenges may result in:

- Updated noise studies
- Insufficient impact & feasibility analysis
- Lost opportunities reduced abatement costs
- Changes in barrier length, height, & location
- Inaccurate cost justification for abatement

**QUESTIONS?**

# **Environmental Requirements for Public Involvement**



## Environmental Requirements

- Refer to VDOT Public Involvement Manual
- Must mention NEPA document, etc. in Public Hearing announcements
- Make NEPA document available to public & at Public Hearing
- Failure to meet public involvement requirements can jeopardize project schedule and funding

# Summary

- Environmental compliance is legally required
- FHWA holds VDOT accountable for NEPA compliance
- Provide as much engineering information as possible during scoping
- Use SERP /NEPA data to develop plans / alternatives
- Avoid / minimize impacts to environment through design

- No modifications to project after environmental document / permits
- Environmental commitments must be implemented
- VDOT monitors during construction

**QUESTIONS?**

# NEXT STEPS...